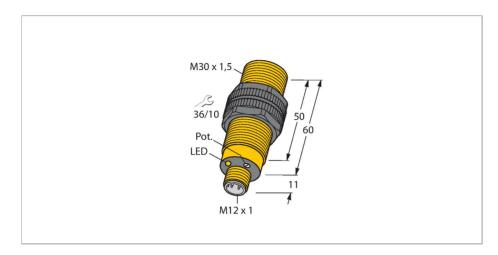


# BCE10-S30-VN6X-H1141 Capacitive Sensor – With Potentiometer



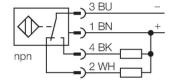
#### Technical data

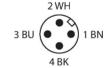
| ID no.  | Туре                                 | BCE10-S30-VN6X-H1141               |
|---|--------------------------------------|------------------------------------|
| Rated switching distance (non-flush)       15 mm         Secured operating distance       ≤ (0.72 × Sn)         Hysteresis       120 %         Temperature drift       type 20 %         Repeat accuracy       ≤ 5 % of full scale         Ambient temperature       -10+60 °C         Electrical data       0perating voltage         Operating voltage       1030 VDC         Residual ripple       ≤ 10 % U₂s         DC rated operational current       ≤ 100 mA         No-load current       ≤ 15 mA         Residual current       ≤ 0.1 mA         Switching frequency       0.05 kHz         Isolation test voltage       ≤ 0.5 kV         Output function       4-wire, Complementary contact, NPN         Short-circuit protection       yes / Cyclic         Voltage drop at I₂       ≤ 1.8 V         Wire breakage/Reverse polarity       yes / Complete | ID no.                               | 100026663                          |
| Secured operating distance       ≤ (0.72 × Sn)         Hysteresis       120 %         Temperature drift       type 20 %         Repeat accuracy       ≤ 5 % of full scale         Ambient temperature       -10+60 °C         Electrical data       0perating voltage         Operating voltage       1030 VDC         Residual ripple       ≤ 10 % U₅s         DC rated operational current       ≤ 100 mA         No-load current       ≤ 15 mA         Residual current       ≤ 0.1 mA         Switching frequency       0.05 kHz         Isolation test voltage       ≤ 0.5 kV         Output function       4-wire, Complementary contact, NPN         Short-circuit protection       yes / Cyclic         Voltage drop at I₀       ≤ 1.8 V         Wire breakage/Reverse polarity       yes / Complete  | Rated switching distance (flush)     | 10 mm                              |
| Hysteresis  120 %  Temperature drift  type 20 %  Repeat accuracy  ≤ 5 % of full scale  Ambient temperature  -10+60 °C  Electrical data  Operating voltage  1030 VDC  Residual ripple  ≤ 10 % U₅s  DC rated operational current  ≤ 100 mA  No-load current  ≤ 15 mA  Residual current  ≤ 0.1 mA  Switching frequency  0.05 kHz  Isolation test voltage  Output function  4-wire, Complementary contact, NPN  Short-circuit protection  yes / Cyclic  Voltage drop at I₀  ≤ 1.8 V  Wire breakage/Reverse polarity  yes / Complete   | Rated switching distance (non-flush) | 15 mm                              |
| Temperature drift type 20 %  Repeat accuracy ≤ 5 % of full scale  Ambient temperature -10+60 °C  Electrical data  Operating voltage 1030 VDC  Residual ripple ≤ 10 % U <sub>ss</sub> DC rated operational current ≤ 100 mA  No-load current ≤ 15 mA  Residual current ≤ 0.1 mA  Switching frequency 0.05 kHz  Isolation test voltage ≤ 0.5 kV  Output function 4-wire, Complementary contact, NPN  Short-circuit protection yes / Cyclic  Voltage drop at I <sub>s</sub> ≤ 1.8 V  Wire breakage/Reverse polarity yes / Complete   | Secured operating distance           | ≤ (0.72 × Sn)                      |
| Repeat accuracy ≤ 5 % of full scale  Ambient temperature -10+60 °C  Electrical data  Operating voltage 1030 VDC  Residual ripple ≤ 10 % U₅s  DC rated operational current ≤ 100 mA  No-load current ≤ 15 mA  Residual current ≤ 0.1 mA  Switching frequency 0.05 kHz  Isolation test voltage ≤ 0.5 kV  Output function 4-wire, Complementary contact, NPN  Short-circuit protection yes / Cyclic  Voltage drop at I₀ ≤ 1.8 V  Wire breakage/Reverse polarity yes / Complete   | Hysteresis                           | 120 %                              |
| Ambient temperature -10+60 °C  Electrical data  Operating voltage 1030 VDC  Residual ripple ≤ 10 % U <sub>ss</sub> DC rated operational current ≤ 100 mA  No-load current ≤ 15 mA  Residual current ≤ 0.1 mA  Switching frequency 0.05 kHz  Isolation test voltage ≤ 0.5 kV  Output function 4-wire, Complementary contact, NPN  Short-circuit protection yes / Cyclic  Voltage drop at I <sub>s</sub> ≤ 1.8 V  Wire breakage/Reverse polarity yes / Complete   | Temperature drift                    | type 20 %                          |
| Electrical data         Operating voltage       1030 VDC         Residual ripple       ≤ 10 % U₅s         DC rated operational current       ≤ 100 mA         No-load current       ≤ 15 mA         Residual current       ≤ 0.1 mA         Switching frequency       0.05 kHz         Isolation test voltage       ≤ 0.5 kV         Output function       4-wire, Complementary contact, NPN         Short-circuit protection       yes / Cyclic         Voltage drop at I₀       ≤ 1.8 V         Wire breakage/Reverse polarity       yes / Complete  | Repeat accuracy                      | ≤ 5 % of full scale                |
| Operating voltage       1030 VDC         Residual ripple       ≤ 10 % U₅s         DC rated operational current       ≤ 100 mA         No-load current       ≤ 15 mA         Residual current       ≤ 0.1 mA         Switching frequency       0.05 kHz         Isolation test voltage       ≤ 0.5 kV         Output function       4-wire, Complementary contact, NPN         Short-circuit protection       yes / Cyclic         Voltage drop at I₀       ≤ 1.8 V         Wire breakage/Reverse polarity       yes / Complete  | Ambient temperature                  | -10+60 °C                          |
| Residual ripple       ≤ 10 % U₅s         DC rated operational current       ≤ 100 mA         No-load current       ≤ 15 mA         Residual current       ≤ 0.1 mA         Switching frequency       0.05 kHz         Isolation test voltage       ≤ 0.5 kV         Output function       4-wire, Complementary contact, NPN         Short-circuit protection       yes / Cyclic         Voltage drop at I₀       ≤ 1.8 V         Wire breakage/Reverse polarity       yes / Complete   | Electrical data                      |                                    |
| DC rated operational current ≤ 100 mA  No-load current ≤ 15 mA  Residual current ≤ 0.1 mA  Switching frequency 0.05 kHz  Isolation test voltage ≤ 0.5 kV  Output function 4-wire, Complementary contact, NPN  Short-circuit protection yes / Cyclic  Voltage drop at I <sub>e</sub> ≤ 1.8 V  Wire breakage/Reverse polarity yes / Complete  | Operating voltage                    | 1030 VDC                           |
| No-load current       ≤ 15 mA         Residual current       ≤ 0.1 mA         Switching frequency       0.05 kHz         Isolation test voltage       ≤ 0.5 kV         Output function       4-wire, Complementary contact, NPN         Short-circuit protection       yes / Cyclic         Voltage drop at I₀       ≤ 1.8 V         Wire breakage/Reverse polarity       yes / Complete  | Residual ripple                      | ≤ 10 % U <sub>ss</sub>             |
| Residual current       ≤ 0.1 mA         Switching frequency       0.05 kHz         Isolation test voltage       ≤ 0.5 kV         Output function       4-wire, Complementary contact, NPN         Short-circuit protection       yes / Cyclic         Voltage drop at $I_e$ ≤ 1.8 V         Wire breakage/Reverse polarity       yes / Complete   | DC rated operational current         | ≤ 100 mA                           |
| Switching frequency       0.05 kHz         Isolation test voltage       ≤ 0.5 kV         Output function       4-wire, Complementary contact, NPN         Short-circuit protection       yes / Cyclic         Voltage drop at I₀       ≤ 1.8 V         Wire breakage/Reverse polarity       yes / Complete  | No-load current                      | ≤ 15 mA                            |
| Isolation test voltage       ≤ 0.5 kV         Output function       4-wire, Complementary contact, NPN         Short-circuit protection       yes / Cyclic         Voltage drop at I₀       ≤ 1.8 V         Wire breakage/Reverse polarity       yes / Complete   | Residual current                     | ≤ 0.1 mA                           |
| Output function       4-wire, Complementary contact, NPN         Short-circuit protection       yes / Cyclic         Voltage drop at I₀       ≤ 1.8 V         Wire breakage/Reverse polarity       yes / Complete   | Switching frequency                  | 0.05 kHz                           |
| Short-circuit protection yes / Cyclic  Voltage drop at I₀ ≤ 1.8 V  Wire breakage/Reverse polarity yes / Complete  | Isolation test voltage               | ≤ 0.5 kV                           |
| Voltage drop at I₀ ≤ 1.8 V  Wire breakage/Reverse polarity yes / Complete   | Output function                      | 4-wire, Complementary contact, NPN |
| Wire breakage/Reverse polarity yes / Complete   | Short-circuit protection             | yes / Cyclic                       |
|   | Voltage drop at I <sub>e</sub>       | ≤ 1.8 V                            |
|   |                                      | yes / Complete                     |
| Tests/approvals   | Tests/approvals                      |                                    |
| Approvals UL  | Approvals                            | UL                                 |

#### **Features**

- ■M30 × 1.5 threaded barrel
- Plastic, PA12-GF30
- Fine adjustment via potentiometer
- ■DC 4-wire, 10...30 VDC
- Complementary contact, NPN output
- ■M12 × 1 connector

### Wiring diagram





### Functional principle

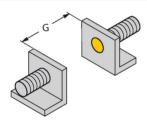
Capacitive proximity switches are designed for non-contact and wear-free detection of electrically conductive as well as non-conductive metal objects.

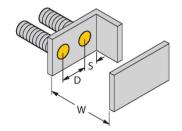
### Technical data

| UL registration number                | E210608                                    |
|---------------------------------------|--|
| Mechanical data                       |  |
| Design                                | Threaded barrel, M30 × 1.5                 |
| Dimensions                            | 60 mm                                      |
| Housing material                      | Plastic, PA6-GF30                          |
| Active area material                  | PA12-GF30, yellow                          |
| Admissible pressure on front cap      | ≤ 3 bar                                    |
| Max. tightening torque of housing nut | 5 Nm                                       |
| Electrical connection                 | Connector, M12 × 1                         |
| Vibration resistance                  | 55 Hz (1 mm)                               |
| Shock resistance                      | 30 g (11 ms)                               |
| Protection class                      | IP65                                       |
| MTTF                                  | 1080 years acc. to SN 29500 (Ed. 99) 40 °C |
| Switching state                       | LED, Yellow                                |

## Mounting instructions

#### **Product features**





| Distance D             | 60 mm   |
|------------------------|---------|
| Distance W             | 30 mm   |
| Distance S             | 45 mm   |
| Distance G             | 60 mm   |
| Diameter active area B | Ø 30 mm |

The given minimum distances have been checked against the standard switching distance.

Should the sensitivity of the sensors be changed via potentiometer, the data sheet specifications no longer apply.